

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 February 2003 (27.02.2003)

PCT

(10) International Publication Number
WO 03/017724 A3

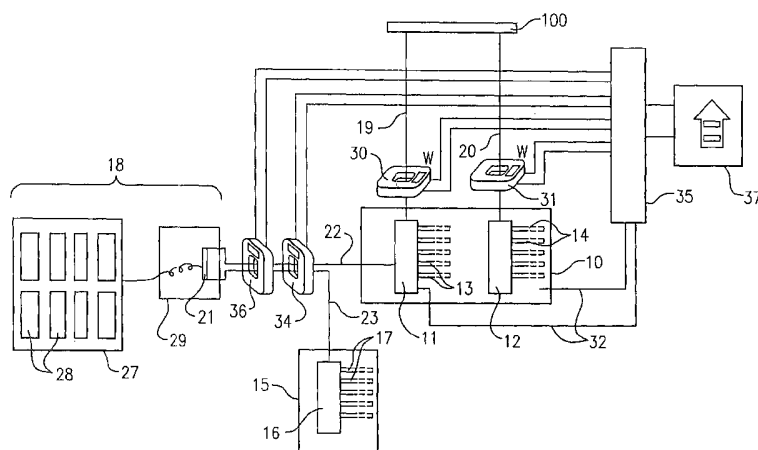
- (51) International Patent Classification⁷: **H05B 1/02**
- (21) International Application Number: PCT/US02/25876
- (22) International Filing Date: 13 August 2002 (13.08.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/311,881 13 August 2001 (13.08.2001) US
- (71) Applicant (for all designated States except US): **ASTROPOWER, INC.** [US/US]; 300 Executive Drive, Newark, DE 19702-3316 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SCHRIPSEMA, Jason** [US/US]; 7156 Marlborough Terrace, Berkeley, CA 94520 (US). **CULIK, Jerome, S.** [US/US]; 2219 Buck Rub Drive, Nottingham, PA 19362 (US). **MROHS, Mark** [US/US]; 11083 Baton Rouge Avenue, Northridge, CA 91326 (US). **BARNETT, Allen** [US/US]; 19 Nivin Lane, Landenberg, PA 19350-1375 (US).
- (74) Agents: **BROWN, Kevin, C.** et al.; BARR & BROWN, P.O. Box 7068, Syracuse, NY 13261 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

(88) Date of publication of the international search report:
20 November 2003

[Continued on next page]

(54) Title: POWER AND/OR ENERGY MONITOR, METHOD OF USING, AND DISPLAY DEVICE



(57) Abstract: There are provided monitors which sense a magnitude of power (and/or energy) being consumed by a facility and which sense a magnitude of power (and/or energy) being produced by at least one energy-producing system. There are provided facilities comprising at least one main panel bus (11), at least one external power line, at least one energy-producing system (18), at least one critical load sub-panel bus (16) and at least one monitor (30) which senses a magnitude of power (and/or energy) being consumed by the facility and a magnitude of power (and/or energy) being produced by the at least one energy-producing system. There are provided methods of monitoring power (and/or energy) consumed and power (and/or energy) produced in a facility, and devices which display magnitude of power (and/or energy) being consumed and magnitude of power (and/or energy) being produced in a battery.



WO 03/017724 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/25876

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : H05B 1/02) US CL : 219/506,483		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) U.S. : 219/506,483		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched 219/494,486		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 6,291,764 B1 (ISHIDA ET AL) 18 SEPTEMBER 2001, SEE ENTIRE DOCUMENT.	1-97
A,P	US 6,282,104 B1 (KERN) 28 AUGUST 2001, SEE ENTIRE DOCUMENT.	1-97
A,E	US 6,487,457 B1 (HULL ET AL) 26 NOVEMBER 2002, SEE ENTIRE DOCUMENT.	1-97
A	US 5,648,731 A (DECKER ET AL) 15 JULY 1997, SEE ENTIRE DOCUMENT.	1-97
A,P	US 6,339,538 B1 (HANDLEMAN) 15 JANUARY 2002, SEE ENTIRE DOCUMENT.	1-97
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	
"P"	document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family
Date of the actual completion of the international search 16 December 2002 (16.12.2002)	Date of mailing of the international search report 03 FEB 2003	
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Teresa Walberg <i>A. Hawley for</i> Telephone No. 703 308-0861	